# THEORETICAL AND APPLIED GENETICS

## International Journal of Plant Breeding Research

**Volume 95 · 1997**



Springer

**THEORETICAL AND APPLIED GENETICS**

International Journal of Plant Breeding Research

Founded in 1929 as "Der Züchter", a German journal for theoretical and applied genetics. In 1966 its direction changed from national to international and from plant breeding to genetics and breeding research. The title changed in 1968 to "Theoretical and Applied Genetics". Edited by H. Stubbe from 1946 to 1976, by H. F. Linskens 1977 to 1987 and by G. Wenzel from 1988

**TAG will publish original articles in the following areas:**

- **Genetic and physiological fundamentals of plant breeding**
- **Applications of plant biotechnology**
- **Theoretical considerations in combination with experimental data**

Springer



**Electronic edition.** An electronic edition of this journal is available via the LINK Information Service http://link.springer.de. You may contact us per e-mail access@link.springer.de or by fax +49-62 21-4 87-2 88. Would you like to automatically receive per e-mail the table of contents with direct links to the respective abstracts as soon as a new issue is available via LINK? Then take advantage of our new, free service LINK Alert. For registration and further information just go to http://link.springer.de/alert.

## Typesetting

Macmillan India Ltd.

## Printing and bookbinding

Graphischer Betrieb K. Triltsch, Würzburg, Germany


Springer-Verlag GmbH & Co. KG, Berlin, Germany
Printed in Germany

# Table of contents Volume 95, 1997

No. 1–2, pp. 1 – 312 published in July 1997
No. 3, pp. 313 – 508 published in August 1997
No. 4, pp. 509 – 722 published in September 1997
No. 5–6, pp. 723 – 1024 published in October 1997
No. 7, pp. 1025 – 1180 published in November 1997
No. 8, pp. 1181 – 1334 published in December 1997

## Acknowledgements

The editors wish to thank the following referees for their assistance and evaluation of manuscripts submitted

S. B. Altenbach (Albany, USA)
K. Armstrong (Ottawa, Canada)
G. Backes (Freising, Germany)
D. Bartels (Köln, Germany)
H. S. Baryana, (Camden, Australia)
U. Bellin (Berlin, Germany)
J. L. Bennetzen (West Lafayette, USA)
J. A. Bietz (Peoria, USA)
T. Blake (Montana State University, USA)
A. Blechl (Albany, USA)
N. Borysjuk (New Brunswick, USA)
A. H. D. Brown (Oslo, Norway)
C. L. Brubaker (Canberra, Australia)
B. Burson (College Station, USA)
M. Capperdocia (Montreal, Canada)
D. Chen (Davis, USA)
A. E. Clarke (Parkville, Australia)
E. H. Coe (Columbia, USA)
D. de Vienne (Bordeaux, France)
P. B. Cregan (Beltsville, USA)
K. Devos (Norwich, UK)
R. L. Doudrick (Saucier, USA)
D. N. Duvick (Johnston, USA)
J. Dvorak (Davis, USA)
W. Ecke (Göttingen, Germany)
N. Ellis (St. Lucia, Australia)
M. Edney (Winnipeg, USA)
M. Foolad (Penn University Park, USA)
G. Forbes (Quíto, Ecuador)
B. Foroughi-Wehr (Grünbach, Germany)
U. Frei (Freising, Germany)
W. Friedt (Gießen, Germany)
M. Gale (Norwich, UK)
C. Gebhardt (Köln, Germany)
A. Gierl (Garching, Germany)
W. Grüneberg (Göttingen, Germany)
W. Hanna (Tifiton, USA)
M. J. Havey (Madison, USA)
J. G. Hawkes (Birmingham, UK)
C. Hedgcoth (Manhattan, USA)
J. P. Helgeson (Madison, USA)
D. L. Hoffmann (Aberdeen, USA)
N. Huang (Los Banos, Philippines)
A. Jahoor (Freising, Germany)
N. G. K. Jones (Harpenden, USA)
D. B. Jones (Madison, USA)
S. Kaeppler (Madison, USA)
J. Kelly (East Lansing, USA)
S. J. Knapp (Corvallis, USA)
W. Köhler (Gießen, Germany)
M. P. Kubisiak (Rochester, USA)
G. S. Khush (Los Banos, Philippines)
L. M. Lagrimini (Columbus, USA)
F. Léon (Bonn, Germany)
R. F. Line (Pullman, USA)
W. Link (Göttingen, Germany)
A. Lukaszewski (Riverside, USA)
G. Lookhart (Manhattan, USA)
D. J. MacKill (Davis, USA)
C. Marakoff (Oxford, USA)
T. McKnight (College Station, USA)
T. Miedaner (Stuttgart, Germany)
P. Miklas (Prosser, USA)
G. A. Moore (Gainesville, USA)
J. Myers (Corvallis, USA)
D. B. Neale (Berkeley, USA)
C. Nelson (Ithaca, USA)
A. Paterson (College Station, USA)
A. Pepper (College Station, USA)
N. Pogrebuyak (Princeton, USA)
W. Powell (Dundee, UK)
M. Querci (Lima, Peru)
L. Rieseberg (Bloomington, USA)
F. J. Seitzer (Einbeck, Germany)
M. Sigareva (Ithaca, USA)
C. Simon (Grünbach, Germany)
P. H. Sisco (Raleigh, USA)
C. Smith (Guelph, Canada)
C. W. Stuber (Raleigh, USA)
K. Suzuki (Tokio, Japan)
R. Tarchini (Milano, Italy)
N. Weeden (Geneva, USA)
H. VanTang (Gainesville, USA)
T. Wehner (Raleigh, USA)
J. F. Wendel (Ames, USA)
Y. Yen (Brookings, USA)
F. J. Zeller (Freising, Germany)

as well as the assistance of Mrs. Ritta Wehrer at the editorial office.